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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/819,673 | 03/29/2001 | Eiichi Murakami | 684.3161 | 3158 |

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| EXAMINER | |
|---|---|
| COLEMAN, WILLIAM D | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2823 | |

DATE MAILED: 11/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/819,673 | Applicant(s) MURAKAMI, EIICHI | |
|---|---|---|---|
| | Examiner W. David Coleman | Art Unit 2823 | |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 July 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *18-20 and 22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-17,21,23 and 24* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *March 29, 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Application/Control Number: 09/819,673
Art Unit: 2823

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 18-20 and 22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1, 2, 3, 5, 7, 8, 10, 11 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi et al., U.S. Patent 5,137,349.

4. Pertaining to claim 1, Taniguchi discloses an exposure apparatus as claimed. See **FIGD. 1-3** where Taniguchi teaches an exposure apparatus for printing, by exposure, a pattern of an original on a substrate, said apparatus comprising:

a housing **7** tightly filled with a predetermined ambience (i.e., light) and for accommodating therein at least a portion of an exposure light optical axis (**AX**); and

a detection system having an optical system **15A/15B**, wherein a portion of a light path of said detection **15A** system is disposed in a first space enclosed by said housing, and wherein at least another portion of said detection system including an electric element thereof is disposed in a second space **15B** outside said housing.

5. Pertaining to claim 2, Taniguchi teaches an apparatus according to Claim 1, wherein said housing is effective to tightly close one of (i) a space below a projection lens and accommodating the substrate therein and (ii) a space above the projection lens and accommodating the original therein.

6. Pertaining to claim 3, Taniguchi teaches an apparatus according to Claim 1, wherein said detection system is a detection system for executing focus adjustment of the substrate (W).

7. Pertaining to claim 5, Taniguchi teaches an apparatus according to Claim 1, wherein said detection system is a detection system for executing positional alignment between the original and the substrate. (*Please note that the Examiner has taken the position that the meaning of the term "original" to mean anything).*

8. Pertaining to claim 7, Taniguchi discloses an apparatus according to Claim 1, wherein said detection system is a position measuring system for measuring a position of a stage for carrying thereon one of the original and the substrate.

9. Pertaining to claim 8, Taniguchi discloses an apparatus according to Claim 7, wherein the portion of the light path disposed in said first space extends by way of a mirror mounded on the stage and for reflecting measurement light.

10. Pertaining to claim 10, Taniguchi discloses an apparatus according to Claim 1, further comprising a pressure reducing mechanism for applying a vacuum to said first space.

11. Pertaining to claim 11, Taniguchi discloses an apparatus according to Claim 1, further comprising a window provided at an interface between said first and second spaces, for transmitting detection light of said detection system therethrough (i.e., the window is at the end of housing 7).

12. Pertaining to claim 17, Taniguchi discloses an apparatus according to Claim 1, wherein light to be used for the exposure is fluorine excimer laser light (column 4, lines 25-26).

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 4, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al., U.S. Patent 5,137,349 as applied to claims 1, 2, 3, 5, 7, 10, 11 and 17 above, and further in view of Oshida et al., U.S. Patent 5,227,862.

15. Pertaining to claims 4, 6 and 9, Taniguchi discloses an apparatus substantially as claimed as discussed above. However Taniguchi fails to disclose an apparatus according to Claim 3, wherein the electric element is one of a light source and a CCD. Oshida teaches wherein the electric element is one of a light source and a CCD (see **FIG. 37** of Oshida). In view of Oshida, it would have been obvious to one of ordinary skill in the art to incorporate an electric element one of a light source (1', i.e., laser light source) and a CCD 3 in the Taniguchi apparatus because two wavelengths are measured by sequentially opening and closing the shutters (column 38, lines 45-55).

16. Claims 12, 13, 14, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al., U.S. Patent 5,137,349 as applied to claims 1, 2, 3, 5, 7, 8, 10, 11, and 17 above, and further in view of Suenaga et al., U.S. Patent 6,451,507 B1.

17. Pertaining to claim 12, Taniguchi discloses a semiconductor apparatus substantially as claimed. However, Taniguchi fails to disclose 12. An apparatus according to Claim 1, wherein an oxygen concentration in said first space is maintained at not greater than 10 ppm. Suenaga discloses small amounts of oxygen in a first space but does not disclose a specific amount. Given the teaching of the references, it would have been obvious to determine the optimum thickness, temperature as well as condition of delivery of the layers involved. See *In re Aller, Lacey and Hall* (10 USPQ 233-237) "It is not inventive to discover optimum or workable ranges by routine experimentation. Note that the specification contains no disclosure of either the critical nature of the claimed ranges or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 f.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Any differences in the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that the difference is really unexpected. *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)

Appellants have the burden of explaining the data in any declaration they proffer as evidence of non-obviousness. *Ex parte Ishizaka*, 24 USPQ2d 1621, 1624 (Bd. Pat. App. & Inter. 1992).

An Affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979).

18. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the

same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

19. "The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature: than when a product is claimed by conventional fashion. *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to Applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

20. Pertaining to claim 13, Taniguchi discloses a semiconductor apparatus substantially as claimed. However, Taniguchi fails to disclose 13, an apparatus according to Claim 1, further comprising a gas introducing mechanism for introducing an inactive gas into said first space. Suenaga discloses a gas introducing mechanism for introducing an inactive gas into said first space. See **FIG. 4**, where Suenaga discloses **206** for introducing an inactive gas. In view of Suenaga, it would have been obvious to one of ordinary skill in the art to incorporate a gas introducing mechanism for introducing an inactive gas in the Taniguchi semiconductor apparatus because they are specific gases having little absorption with respect to light in the vacuum ultraviolet region (column 18, lines 10-15).

21. Pertaining to claim 14, Taniguchi fails to disclose an apparatus according to Claim 1, wherein one of nitrogen and helium is introduced into said first space. Suenaga teaches wherein one of nitrogen and helium is introduced into said first space. In view of Suenaga it would have been obvious to one of ordinary skill in the art to incorporate nitrogen and helium into the semiconductor apparatus of Taniguchi because they are specific gases having little absorption with respect to light in the vacuum ultraviolet region (column 18, lines 10-15).

22. Pertaining to claim 15, Taniguchi fails to disclose an apparatus according to Claim 1, wherein said second space is purged. Suenaga teaches purging a semiconductor apparatus. In view of Suenaga, it would have been obvious to one of ordinary skill to incorporate purging the second space because purging with specific gases have little absorption with respect to light in the vacuum ultraviolet region (column 18, lines 10-15).

23. Pertaining to claim 16, Taniguchi fails to disclose an apparatus according to Claim 1, wherein light to be used for the exposure is laser light having a wavelength not greater than 248 nm. Suenaga teaches wherein a laser light has a wavelength not greater than 248 nm. In view of Suenaga, it would have been obvious to one of ordinary skill in the art to have a laser light wavelength not greater than 248 nm in the Taniguchi semiconductor apparatus because the laser has a sufficiently narrow full width at half maximum on the order of 1.5 pm at the natural frequency (column 17, lines 13-16).

24. Claims 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al., U.S. Patent 5,137,349 in view of Hill, U.S. Patent 6,330,065.

25. Taniguchi discloses a semiconductor apparatus substantially as claimed. See **FIG. 3**, where Taniguchi teaches a semiconductor manufacturing factory, comprising: a group of

production machines for various processes (not shown), including an exposure apparatus for printing, by exposure, a pattern of an original on a substrate, wherein said exposure apparatus includes

(i) a housing tightly filled with a predetermined ambience and for accommodating therein at least a portion of an exposure light optical axis, and (ii) a detection system having an optical system, wherein a portion of said detection system is disposed in a

first space enclosed by the housing, and wherein another portion of said detection system is disposed in a second space outside the housing. However, Taniguchi fails to teach a local area network for connecting the production machine group; and a gateway for enabling an access from the local area network to an external network outside the factory; wherein information related to at least one production machine of the production machine group can be data communicated. Hill teaches a local area network for connecting the production machine group; and a gateway for enabling an access from the local area network to an external network outside the factory; wherein information related to at least one production machine of the production machine group can be data communicated. See **FIG. 3f** where Hill discloses the claimed subject matter (i.e., **1096**). In view of Hill, it would have been obvious to one of ordinary skill in the art to incorporate the semiconductor apparatus of Hill into the Taniguchi semiconductor apparatus because the electronic processors add together $\varphi_6$ and $\varphi_7$ (column 32, lines 8-9). Please note that the claims are apparatus claims and not method of use and no weight has been given to the claims pertaining to its use.

***Objections***

26. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Drawings***

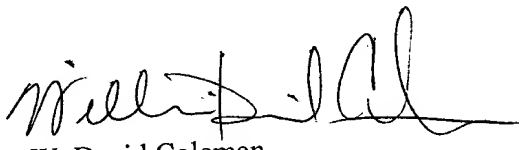
27. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Conclusion***

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 703-305-0004. The examiner can normally be reached on 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



W. David Coleman
Examiner
Art Unit 2823

WDC
November 22, 2002